REMARKS

Claims 14-16, 19-23 and 25-27 are pending.

Claims 14-16, 19-20, 23 and 25-26 stand rejected under 35 U.S.C. 102(b) as being anticipated by Brown et al. (US 5,124,484). Claims 14, 16, 21 and 22 stand rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Brown et al. Applicants respectfully traverse these rejections.

Present claim 14 is directed to a "reaction product" obtained by a process as defined therein. Applicants submit that said "reaction product" is not simply a single compound, but rather is a mixture of compounds which would result from carrying out the steps defined in the claim. As previously argued, with reference to the reaction scheme submitted with the response of January 26, 2004, due to the specific reaction conditions of applicants' process, a substantial amount of by-product of formula VII is produced which characterizes the claimed reaction product. Brown et al. discloses a completely different process wherein said by-product VII is not obtained.

Applicants note in particular that the process disclosed by Brown et al. starts from a carbonyl functionalized polyisobutene of the formula [PEB](CO)R which is different from the **epoxide** starting products of the invention. As illustrated by the reaction scheme, nucleophilic ring opening may occur in **two different ways** which is a further clear difference over Brown et al. Moreover, as disclosed in column 3, lines 6 and 7 according to Brown et al., an **intermediate imine** is formed, which, as illustrated by applicants' reaction scheme, is never formed according to the present invention.

Said imine is then reduced to the final product. Therefore, according to Brown et al., the intermediate product of formula IIa according to the present invention is not formed and consequently said by-product of formula VII is not obtained by Brown et al.

Brown et al. and the present invention also differ with respect to the length of the hydrocarbon residue of the obtained polyalkeneamines. As the process of Brown et al. produces in a first step a carbonyl functionalized polyisobutene, the hydrocarbon chain is extended by one carbon atom according to the prior art process. Contrary to this, a chain extension of this type is not obtained according to the present invention as polyisobutene is functionalized by epoxidation.

Therefore, applicants urge that the present invention differs significantly from the disclosure of the cited art and would not have been obvious therefrom.

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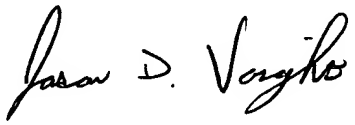
Respectfully submitted,

KEIL & WEINKAUF



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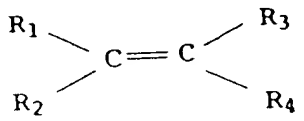
COMPLETE LISTING OF ALL CLAIMS IN THE APPLICATION

1-13. (canceled)

14. (currently amended) A reaction product obtained by

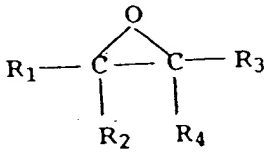
a) epoxidation of a reactive polyalkene of the formula (III)



(III)

where

R_1, R_2, R_3 and R_4, independently of one another, are each hydrogen or an unsubstituted or substituted, saturated or mono- or polyunsaturated aliphatic radical having a number-average molecular weight of up to 40000, at least one of the radicals R_1 to R_4 having a number average molecular weight of from 150 to 40000, to form an epoxide of the formula (IV)

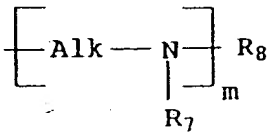


(IV)

b) reaction of the epoxide of formula (IV) with a nitrogen compound of the formula (V)

(V)

where R_5 and R_6, independently of one another, are each hydrogen, alkyl, cycloalkyl, hydroxyalkyl, aminoalkyl, alkenyl, alkynyl, aryl, arylalkyl, alkylaryl, hetaryl or an alkyleneimine radical of the formula (II)



(II)

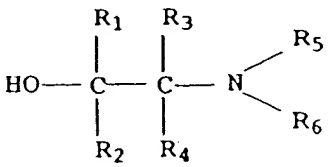
where

Alk is a straight-chain or branched alkylene,

m is an integer from 0 to 10, and

R_7 and R_8, independently of one another, are each hydrogen, alkyl, cycloalkyl, hydroxyalkyl, aminoalkyl, alkenyl, alkynyl, aryl, arylalkyl, alkylaryl or hetaryl or, together with the nitrogen atom to which they are bonded, form a heterocyclic structure,

or R_5 and R_6, together with the nitrogen atom to which they are bonded, form a heterocyclic structure, it being possible for each of the radicals R_5, R_6, R_7 and R_8 to be substituted by further alkyl radicals carrying hydroxyl or amino groups, to form a reaction mixture comprising an amino alcohol of the formula (VI)



(VI)

and

c) catalytic dehydration of the amino alcohol of formula (VI) and hydrogenation of the dehydrated product.

15. (previously presented) The reaction product as defined in claim 14, whose polyalkene portion is formed of C_2-C_4 alkene monomers.

16. (previously presented) The reaction product as defined in claim 15, wherein the C_2-C_4 alkene is 1-butene or isobutene.

17-18. (canceled)

19. (previously presented) The reaction product as defined in claim 14, wherein the nitrogen compound is selected from ammonia, ethylene-1,2-diamine, propylene-1,2-diamine, propylene-1,3-diamine, butylene diamines, the mono-, di- and trialkyl derivatives of said amines, polyalkylene polyamines, the alkylene portions of which do not have more than 6 carbon atoms, the N-amino-C_1-C_6-alkyl piperazine.

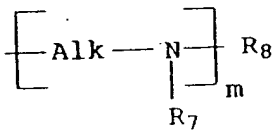
20. (previously presented) The reaction product as defined in claim 19, which is derived from a polyalkene epoxide of the general formula (IV), the polyalkene portion of which is formed of 1-butene or isobutene monomers and the amine portion of which is derived from ammonia.

21. (previously presented) A fuel composition containing at least defined in claim 14 in a concentration of about 20 to 5000 mg/kg of fuel as an additive for keeping the fuel intake system clean.

22. (previously presented) A lubricant composition containing as an additive at least one reaction product as defined in claim 14 in a proportion of about 1 to 15% by weight, based on the total weight of the composition.

23. (previously presented) The reaction product as defined in claim 14, where

R_5 and R_6, independently of one another, are each hydrogen, alkyl, cycloalkyl, aminoalkyl, alkenyl, alkynyl, aryl, arylalkyl, alkylaryl, hetaryl or an alkyleneimine radical of the formula (II)



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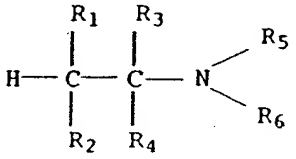
or R_5 and R_6, together with the nitrogen atom to which they are bonded, form a heterocyclic structure, it being possible for each of the radicals R_5, R_6, R_7 and R_8 to be substituted by further alkyl radicals carrying amino groups.

24. (canceled)

25. (previously presented) The reaction product of claim 14, wherein the reactive polyalkene has a high fraction of terminal double bonds.

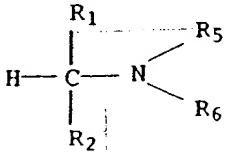
26. (previously presented) An additive composition comprising the reaction product of claim 14.

27. (new) A reaction mixture comprising a compound of the formula I



(I)

and a compound of the formula



said reaction mixture being obtained by

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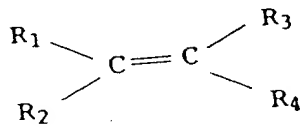

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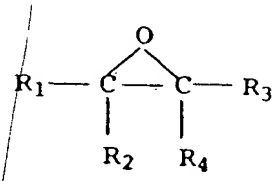

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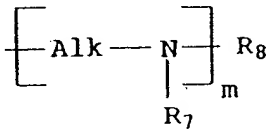

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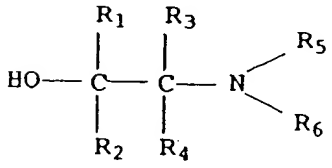

(VI)

and

c) catalytic dehydration of the amino alcohol of formula (VI) and hydrogenation of the dehydrated product.